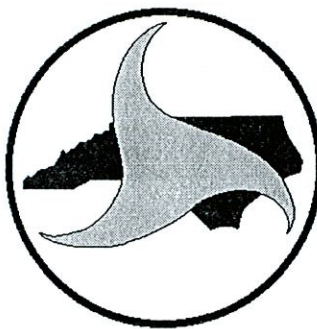


FEASIBILITY STUDY

US 258 and NC 91
From the proposed Crescent Road (R-2719BA) in Kinston
to US 264 east of Wilson
Lenoir and Greene Counties

Division 2

FS-9902A



Prepared by the
Program Development Branch
Division of Highways
N. C. Department of Transportation

A handwritten signature in black ink, appearing to read "Derrick W. Lewis".

Derrick W. Lewis, P.E.
Feasibility Studies Engineer

A handwritten signature in black ink, appearing to read "H. Franklin Vick".

H. Franklin Vick, P.E.
Head of Feasibility Studies

5/22/00
Date

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I. General Description

This feasibility study describes widening US 258 and NC 91 from the proposed Crescent Road (R-2719BA) in Kinston to US 264 east of Wilson, a distance of 22.1 miles (35.6 km). The project location is shown on Figure 1. The proposed cross-section is a combination of four-lane divided highway segments and five-lane curb and gutter segments. The proposed cross section for the four-lane divided widening will consist of 12-foot (3.6 m) travel lanes, 10-foot (3.0-m) outside shoulders, 4-feet (1.2m) of which are paved, and a 46-foot (14-m) median including 2-foot (0.61 m) paved shoulders. The proposed cross section for the five-lane curb and gutter section is 64 feet (19.5 m) wide, face to face of curbs, with 10-foot (3.0-m) berms. The proposed right of way widths are 200 feet (61.0 m) for the four-lane divided sections and 100 feet (30.5 m) for the five-lane sections.

It is anticipated that there will be sixty-two residences and seven businesses relocated due to this project. The total cost of the project, including construction and right-of-way, is estimated to be \$77,600,000.

Construction.....	\$ 61,400,000
Right-of-way.....	\$ 16,200,000
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Total Project Cost	\$ 77,600,000

This study is the initial step in the planning and design process for this project and is not the product of exhaustive environmental or design investigations. The purpose of this study is to describe the proposed project including costs, and to identify potential problems that may require consideration in the planning and design phases.

II. Need for Project

The purpose of this project is to provide improved multilane access to the Global Transpark area north of Kinston. US 258 is designated as a major thoroughfare in the Kinston Thoroughfare Plan and as a minor arterial in the North Carolina Statewide Functional Classification System. NC 91 is classified

as a major collector in the North Carolina Statewide Functional Classification System.

TIP Project R-2719 will construct Crescent Road as a multilane facility on new location north of Kinston. R-2719BA will construct an interchange and relocate a portion of US 258 as a five-lane curb and gutter facility (see Figure 2). This project is currently scheduled for right-of-way acquisition in July 2000 and for construction in August 2001. TIP Project R-525D will construct an interchange at the intersection of US 264 and SR 1311 (see Figure 5). This project is currently under construction and is scheduled for completion in July 2000.

US 258 is currently a two-lane shoulder section with 24 feet (7.4 m) of pavement and 10-foot (3.0-m) shoulders. The southern project terminus will be upgraded to a five-lane curb and gutter section, 64 feet (19.5 m) wide from face-to-face of curbs, under R-2719BA. Development along US 258 in the Kinston area is mostly residential. North of Kinston, development is primarily farmland with sporadic commercial and residential development. Residential and commercial development increases as US 258 approaches Snow Hill. North of NC 58, development within Snow Hill is dense commercial and residential property.

NC 91 is currently a two-lane shoulder section with 20 feet (6.1 m) of pavement and variable 6 feet (1.8 m) to 10 feet (3.0 m) wide soil shoulders. The majority of the property adjacent to the roadway is farmland, with occasional patches of residential development. Central Greene High School is located just south of SR 1358, and Greene County Middle School has access to NC 91 from SR 1330. North of SR 1303, NC 91 becomes a 40-foot (12.2-m) wide two-lane roadway as it passes through the town of Walstonburg. Current access to US 264 from NC 91 is provided via an at-grade intersection between US 264 and SR 1311. This intersection will be upgraded to an interchange under R-525D.

There is a culvert carrying US 258 over Wheat Swamp Creek. Structure No. C2 is a double 10-foot by 7-foot (3.0-m x 2.1-m) reinforced concrete box culvert that is 78.8 feet (24.0 m) long. Built in 1935, this culvert currently has a sufficiency rating of 97.8.

On the northeast side of Snow Hill, there is an existing bridge carrying US 258 over Contentnea Creek. Bridge No. 6 is a reinforced concrete deck on reinforced concrete girders that is 350 feet (106.7 m) long and has a clear roadway width of 28-feet (8.5 m), and 3-foot (0.9-m) sidewalks on each side. Built in 1951, this bridge currently has a sufficiency rating of 59.0.

The Carolina & Northwestern Railroad operates a railway in the vicinity of the town of Walstonburg. This railway carries four trains per day at an average speed of 40 mph (65 k/hr). The exposure index for a proposed railway crossing with this project is 10,000, which does not require a grade separation.

There are existing traffic signals at the intersection of US 258 and NC 58 and at the intersection of NC 91 and US 13.

The 2000 Average Daily Traffic (ADT) along US 258 varies from 7,400 to 10,000 vehicles per day (vpd). For the design year 2020, the estimated traffic volumes on US 258 will range between 20,200 and 23,700 vpd. The 2000 ADT along NC 91 varies from 1,000 to 7,000 vpd. For the design year 2020, the estimated traffic volumes on NC 91 will range between 1,400 and 9,500 vpd. Truck traffic is estimated to make up five percent of daily traffic along US 258 and NC 91.

Currently US 258 and NC 91 are operating at Level of Service (LOS) D. If no improvements are made, it is projected that US 258 will operate at LOS E in the design year 2020, while NC 91 will continue to operate at LOS D. If US 258 is widened to a four-lane highway section, the facility will operate at LOS A in the current year and at LOS B in the design year 2020. If NC 91 is widened to a four-lane highway section, the facility will operate at LOS A thru the design year 2020.

During the three-year period from October, 1995 to September, 1998, there were 146 accidents reported on US 258 within the project limits. There were 145 injuries reported as a result of these accidents, including two fatalities. The accident rate along US 258 within the project limits is 222.06 accidents per 100 million vehicle miles (acc/100mvm). This compares with the 1997 statewide rate of 194.93 acc/100mvm for rural, two-lane US routes.

During the three-year period from October, 1995 to September, 1998, there were 101 accidents reported on NC 91 within the project limits. There were 71 injuries reported as a result of these accidents, including two fatalities. The accident rate along NC 91 within the project limits is 453.32 accidents per 100 million vehicle miles (acc/100mvm). This compares with the 1997 statewide rate of 227.29 acc/100mvm for rural, two-lane NC routes.

III. Description of Project

It is proposed to widen US 258 and NC 91 from the proposed Crescent Road (R-2719BA) in Kinston to US 264 east of Wilson, a distance of 22.1 miles (35.6 km). The project location is shown on Figure 1. Two cross-sections are proposed for this project:

- Four-lane divided highway - 12-foot (3.7-m) wide travel lanes, 10-foot (3.0-m) wide outside shoulders, 4 feet (1.2 m) of which are paved, and a 46 feet (14.0 m) wide median including 2 foot (0.6 m) paved shoulders. The proposed right-of-way width is 200 feet (61.0 m) with no access control.

- Five-lane curb and gutter section - 64 feet (19.5 m) wide from face-to-face of curbs, with 10-foot (3.0-m) berms. The proposed right-of-way width is 100 feet (30.5 m) with no access control.

Segment 1 - Crescent Road Interchange to SR 1106 (7.0 mi.)

It is proposed to extend the five-lane curb and gutter section from the proposed Crescent Road interchange to just north of SR 1536 (Wheat Swamp Rd.). In addition, this segment includes a minor realignment of Wheat Swamp Road. From just north of Wheat Swamp Road to SR 1106 in Greene County, this project proposes to widen US 258 asymmetrically to a four-lane divided highway (see Figure 2).

The existing culvert at Wheat Swamp Creek will need to be extended to accommodate the proposed widening. There is also an existing unlisted reinforced concrete box culvert at Rainbow Creek that will require extending under this project.

It is anticipated that 38 residences and 2 businesses will be relocated due to this segment. The total cost of this segment is as follows:

Construction.....	\$ 14,400,000
Right-of-way.....	\$ 6,000,000
Segment Cost	\$ 20,400,000

Segment 2 - SR 1106 to SR 1330

Segment 2 proposes to bypass the town of Snow Hill on new location from SR 1106 to US 13 with a four-lane divided highway. Two alternates were considered to accomplish this, as shown in Figure 3.

Alternate A would be constructed on new location and would intersect US 13-258 at the existing intersection with NC 91. This alignment will require a new crossing of Contentnea Creek and its surrounding wetlands as well as the adjacent Panther Swamp Creek. Alternate A is estimated to be 5.4 miles (8.7 km) in length.

From US 13-258 to SR 1330, this alternate proposes to widen NC 91 symmetrically to a five-lane curb and gutter section to minimize impacts to Greene Central High School and the surrounding residences along both sides of the roadway.

It is anticipated that 7 residences and 4 businesses will be relocated due to this segment. The total cost of this segment alternate is as follows:

Construction.....	\$ 20,400,000
Right-of-way.....	\$ 5,700,000
Segment Cost, Alt. A	\$ 26,100,000

Alternate B would construct a four-lane divided highway on new location but also use a portion of the existing SR 1400 alignment. This alignment will require a new crossing of Contentnea Creek and its surrounding wetlands as well as the adjacent Panther Swamp Creek. Alternate B is estimated to be 5.3 miles (8.5 km) in length.

Alternate B proposes to intersect US 13-258 at the existing SR 1400 intersection and proceed northwest on new location to intersect NC 91 just south of Central Greene High School. From south of Central Greene High School to SR 1330, it is proposed to widen existing NC 91 to a five-lane curb and gutter section. This will minimize impacts to Greene Central High School and the surrounding residences along both sides of the roadway.

It is anticipated that 5 residences and 2 businesses will be relocated due to this segment. The total cost of this segment alternate is as follows:

Construction.....	\$ 21,500,000
Right-of-way.....	\$ 5,200,000
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Segment Cost, Alt. B	\$ 26,700,000

Segment 3 - SR 1330 to SR 1239 / SR 1312 (5.1 mi.)

Segment 3 proposes to widen NC 91 asymmetrically to a four-lane divided highway on existing location (see Figure 4). It is anticipated that 15 residences and 3 businesses will be relocated due to this segment. The total cost of this segment is as follows:

Construction.....	\$ 10,700,000
Right-of-way.....	\$ 3,700,000
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Segment Cost.....	\$ 14,400,000

Segment 4 - SR 1239 / SR 1312 to US 264

Segment 4 proposes to bypass the town of Walstonburg using both new location and existing facilities from SR 1239 / SR 1312 to US 264. Three alternates were considered to accomplish this, as shown in Figures 5 and 6.

Alternate A would construct a four-lane divided highway on new location from West Side of Walstonburg at SR 1239 / SR 1312 to the intersection of NC 91 and SR 1308. From NC 91 to US 264, this alternate would widen SR 1308 to a five-lane curb and gutter section and convert the existing grade separation at US 264 to a full interchange. Alternate A is estimated to be 4.7 miles (7.6 km) in length (see Figure 5). This alternate will require a new crossing of Thompson Swamp.

This alternate will also create a new grade crossing with the Carolina & Northwestern Railroad, which will have an exposure index of 10,000 and will not

require a grade separation. Two-quadrant gates and flashers are proposed at this new grade crossing.

It is anticipated that 12 residences and 2 businesses will be relocated due to this segment. The total cost of this segment alternate is as follows:

Construction.....	\$ 17,300,000
Right-of-way.....	\$ 3,300,000
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Segment Cost, Alt. A	\$ 20,600,000

Alternate B would widen NC 91 to a five-lane section from SR 1239 / SR 1312 to north of SR 1249. Then construct a four-lane divided highway on new location from East Side of Walstonburg to the intersection of NC 121 and SR 1311. This alternate would then widen SR 1311 to a five-lane curb and gutter section from NC 121 to the proposed US 264/SR 1311 interchange (R-525D). Alternate B is estimated to be 4.3 miles (6.9 km) in length (see Figure 5).

At Lighter Knot Swamp, this alternate will require the construction of a 12-foot by 6-foot (3.7-m x 1.8-m) reinforced concrete box culvert. Extension of an unlisted 12-foot by 6-foot (3.7-m x 1.8-m) reinforced concrete box culvert at a branch of Lighter Knot Swamp is also anticipated. There is also an unlisted double barrel 12-foot by 6-foot (3.7-m x 1.8-m) reinforced concrete box culvert at Thompson Swamp that will require extending.

As in Alternate A, this alternate will also create a new grade crossing with the Carolina & Northwestern Railroad, which will have an exposure index of 10,000 and will not require a grade separation. Two-quadrant gates and flashers are proposed at this new grade crossing.

It is anticipated that 6 residences and 1 business will be relocated due to this segment. The total cost of this segment alternate is as follows:

Construction.....	\$ 13,200,000
Right-of-way.....	\$ 1,900,000
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Segment Cost, Alt. B	\$ 15,100,000

Alternate C is a combination of Alternate A and B. This alternate would construct a four-lane divided highway on new location on the east side of Walstonburg from SR 1239 / SR 1312 to the intersection of NC 121 and SR 1311. This alternate would widen SR 1311 to a five-lane curb and gutter section from NC 121 to the proposed US 264/SR 1311 interchange (R-525D). Alternate C would be 4.1 miles (6.6 km) in length (see Figure 6).

As in Alternate B, this alternate will require the construction of a reinforced concrete box culvert at Lighter Knot Swamp. The extension of two unlisted

reinforced concrete box culverts, one at a branch of Lighter Knot Swamp the other at Thompson Swamp, are also anticipated. There is also an unlisted reinforced concrete box culvert at Thompson Swamp that will require extending.

As in Alternates A and B, this alternate will also create a new grade crossing with the Carolina & Northwestern Railroad, which will have an exposure index of 10,000 and will not require a grade separation. Two-quadrant gates and flashers are proposed at this new grade crossing.

It is anticipated that 4 residences and no businesses will be relocated due to this segment. The total cost of this segment alternate is as follows:

Construction.....	\$ 14,800,000
Right-of-way.....	\$ 1,300,000
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Segment Cost, Alt. C	\$ 16,100,000

IV. Discussion of Alternatives

Of the two alternates in Segment 2, Alternate B is more favorable than Alternate A. Alternate B will cross US 13-258 further northeast than Alternate A, which puts it further away from the existing intersection of US 13 and US 258. This intersection is already congested, and by shifting the intersection of a new highway further away as in Alternate B, the impacts to the US 13/US 258 intersection should be lessened.

In Segment 4, Alternates B and C are more favorable than Alternate A. Since an existing interchange is being constructed at SR 1311 under R-525D, neither Alternate B nor Alternate C will require an interchange to be constructed as in Alternate A. Alternate C appears to offer several advantages to Alternate B. By using new location, Alternate C will avoid any impacts to a section of heavy residential development along NC 91 between SR 1239 / SR 1312 and SR 1249. Alternate C will also feature a four-lane highway section continuously, as compared to Alternate B, which uses a five-lane curb and gutter section in the vicinity of the aforementioned residential development.

Therefore, it is recommended that Alternate 2B and 4C be utilized in this project. It is anticipated that 62 residences and 7 businesses will be relocated due to the project. The total cost of the recommended improvements is as follows:

Construction.....	\$ 61,400,000
Right-of-way.....	\$ 16,200,000
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Total Project Cost	\$ 77,600,000

V. Additional Comments

A transportation benefit analysis was conducted for this project. It is estimated that the total transportation benefits between the current year and the design year (2020) for the proposed improvements are \$192,600,000, or \$9,630,000 per year. The total benefits include accident cost savings, time cost savings, and operating cost savings.

There is a property adjacent to the project listed on the National Register of Historic Places. The Titus W. Carr House is located on SR 1244 near its intersection with NC 91. No impact to this structure is anticipated as a part of this project.

Impacts to wetlands are expected at all stream crossings and a Corps of Engineers Section 404 Permit is anticipated.

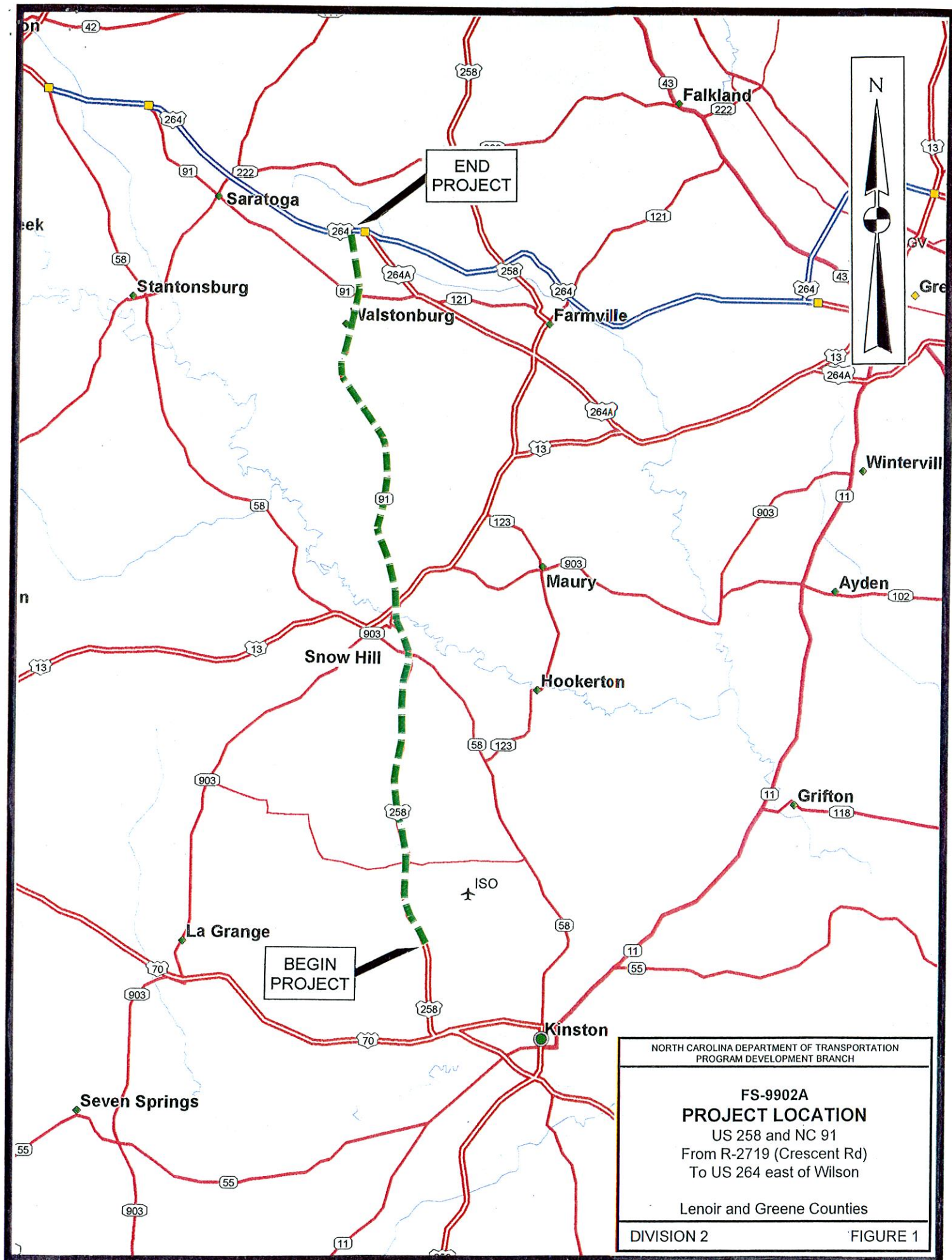
Based on maps at the Department of Environment, Health & Natural Resources - Natural Heritage Section, no threatened or endangered species were identified in the project corridor.

A portion of NC 91 between US 13 and SR 1244 is located within a groundwater discharge area.

WGM Safety (NCD 981 466 931) is a Superfund site located adjacent to US 258 south of Snow Hill. No impacts to this property are expected as part of the proposed improvements.

All streams located within the project corridor are classified as Class C nutrient-sensitive swamp waters. These streams are part of the Neuse River Basin.

No special accommodation for bicycles is recommended on this project.



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PROGRAM DEVELOPMENT BRANCH

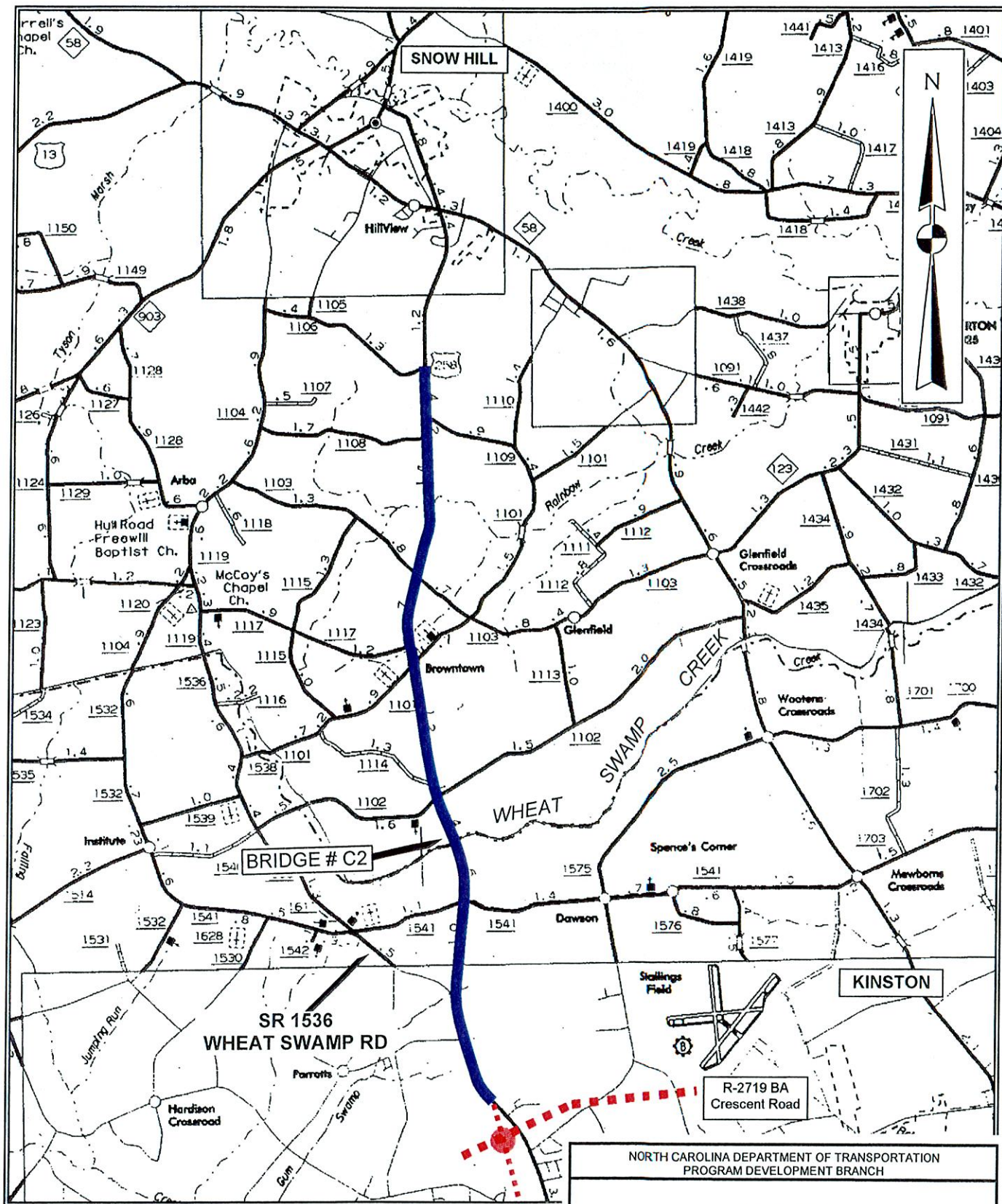
**FS-9902A
PROJECT LOCATION**

US 258 and NC 91
From R-2719 (Crescent Rd)
To US 264 east of Wilson

Lenoir and Greene Counties

DIVISION 2

FIGURE 1



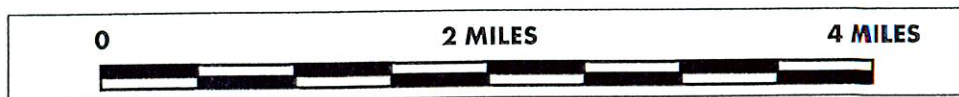
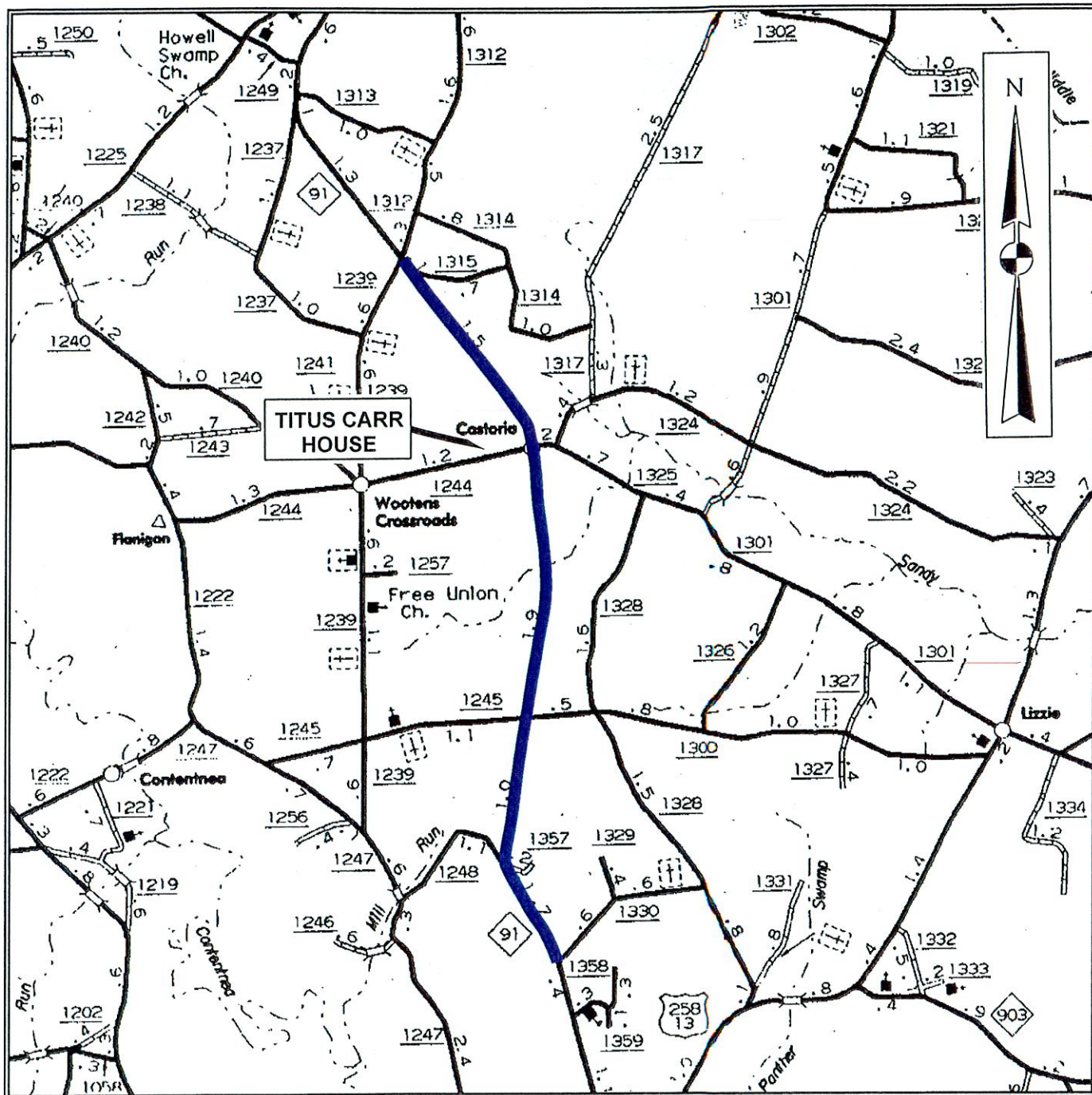
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
PROGRAM DEVELOPMENT BRANCH

**FS-9902A
SEGMENT 1**

US 258 & NC 91
From Crescent Rd. Interchange
To US 264 east of Wilson
Lenoir & Greene Counties

DIVISION 2

FIGURE 2



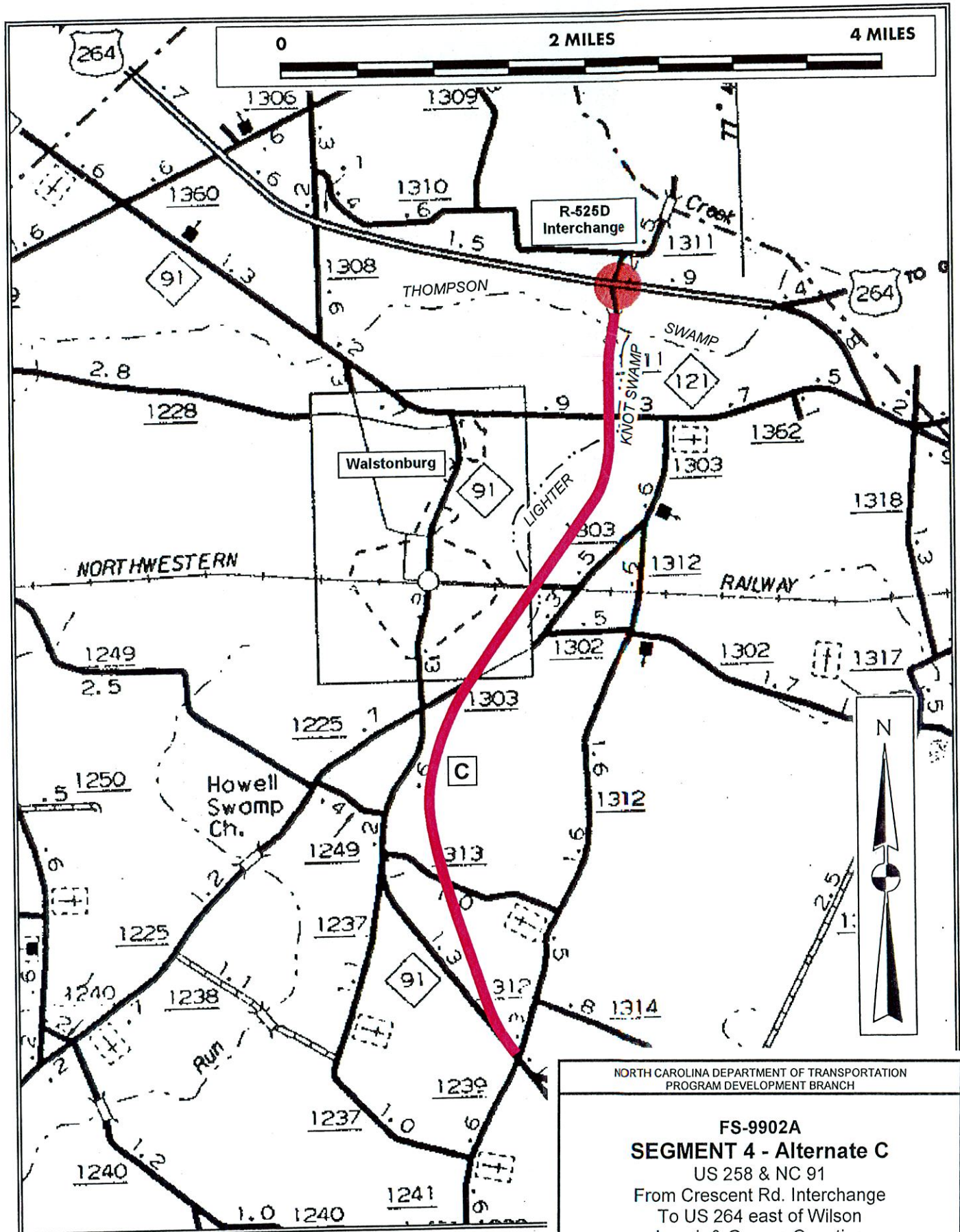
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**FS-9902A
SEGMENT 3**

US 258 & NC 91
From Crescent Rd. Interchange
To US 264 east of Wilson
Lenoir & Greene Counties

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FIGURE 4



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FS-9902A
SEGMENT 4 - Alternate C

US 258 & NC 91
From Crescent Rd. Interchange
To US 264 east of Wilson
Lenoir & Greene Counties